	L #	Hits	Search Text	DBs
1	L1	1	10/725571	US-PGPUB; USPAT; EPO; JPO
2	L2	32232	mark.clm.	US-PGPUB; USPAT; EPO; JPO
3	L3	552359	mark	US-PGPUB; USPAT; EPO; JPO
4	L4	1257321	align$	US-PGPUB; USPAT; EPO; JPO
5	L5	618958	monitor	US-PGPUB; USPAT; EPO; JPO
6	L6	406949	mask or photomask or reticle	US-PGPUB; USPAT; EPO; JPO
7	L7	972723	shift or shifting or shifter or shifted	US-PGPUB; USPAT; EPO; JPO
8	L8	7744	430/5.ccls.	US-PGPUB; USPAT; EPO; JPO
9	L9	341654	inspect$	US-PGPUB; USPAT; EPO; JPO
10	L10	34422	6 with set	US-PGPUB; USPAT; EPO; JPO
11	L11	16304	6 with 7	US-PGPUB; USPAT; EPO; JPO
12	L12	1466	430/394.ccls.	US-PGPUB; USPAT; EPO; JPO
13	L13	5159	10 11	US-PGPUB; USPAT; EPO; JPO
14	L14	457	2 13	US-PGPUB; USPAT; EPO; JPO
15	L15	2926	4 13	US-PGPUB; USPAT; EPO; JPO
16	L16	414	14 15	US-PGPUB; USPAT; EPO; JPO
17	L17	1532	8 10	US-PGPUB; USPAT; EPO; JPO
18	L18	57	16 17	US-PGPUB; USPAT; EPO; JPO
19	L19	4819	10.clm.	US-PGPUB; USPAT; EPO; JPO
20	L20	17	18 19	US-PGPUB; USPAT; EPO; JPO
21	L21	393787	4.clm.	US-PGPUB; USPAT; EPO; JPO

	L #	Hits	Search Text	DBs
22	L22	15	20 21	US-PGPUB; USPAT; EPO; JPO
23	L23	0	("2004/0219439").URPN.	USPAT
24	L24	1	"6701512"	USPAT
25	L25	0	10/784277	USPAT
26	L26	1	10/784277	US-PGPUB; USPAT; EPO; JPO
27	L27	66373	5.clm.	US-PGPUB; USPAT; EPO; JPO
28	L28	0	22 23	US-PGPUB; USPAT; EPO; JPO
29	L29	1	22 27	US-PGPUB; USPAT; EPO; JPO
30	L30	280225	dose	US-PGPUB; USPAT; EPO; JPO
31	L31	2	30 22	US-PGPUB; USPAT; EPO; JPO
32	L32	5	extending and 22	US-PGPUB; USPAT; EPO; JPO
33	L33	0	32 not 22	US-PGPUB; USPAT; EPO; JPO
34	L34	145301	opaque	US-PGPUB; USPAT; EPO; JPO
35	L35	4120164	cover$ or extend$ or overlay or overlap$	US-PGPUB; USPAT; EPO; JPO
36	L36	19540	34 with 35	US-PGPUB; USPAT; EPO; JPO
37	L37	8495	4 36	US-PGPUB; USPAT; EPO; JPO
38	L38	2906	5 36	US-PGPUB; USPAT; EPO; JPO
39	L39	1756	37 38	US-PGPUB; USPAT; EPO; JPO
40	L40	384	37 11	US-PGPUB; USPAT; EPO; JPO
41	L41	78	39 40	US-PGPUB; USPAT; EPO; JPO
42	L42	4696	36.clm.	US-PGPUB; USPAT; EPO; JPO
43	L43	10	41 42	US-PGPUB; USPAT; EPO; JPO

	L #	Hits	Search Text	DBs
44	L44	4696	36 42	US-PGPUB; USPAT; EPO; JPO
45	L45	245	39 42	US-PGPUB; USPAT; EPO; JPO
46	L46	11	45 2	US-PGPUB; USPAT; EPO; JPO

uniqema

Tween™ series

Polyoxyethylene derivatives of sorbitan esters

The Tween™ series of surfactants are polyoxyethylene derivatives of the Span™ series products. Tween surfactants are hydrophilic, generally soluble or dispersible in water, and soluble in varying degrees in organic liquids. They are used for oil-in-water (O/W) emulsification, dispersion or solubilization of oils, and wetting. Frequently, Tween surfactants are combined with similarly numbered Span surfactants to promote emulsion stability. These products are widely used in personal care, fiber finish, HI&I cleaning, crop protection, paints & coatings, adhesives and other industrial applications.

Table 1: Tween series products

Product	Chemical description	HLB	Color and form at 25°C[1]	Viscosity at 25°C or pour point[2]
Tween 20	POE (20) sorbitan monolaurate	16.7	Yellow liquid	330 cs
Tween 21	POE (4) sorbitan monolaurate	13.3	Yellow liquid	600 cs
Tween 40	POE (20) sorbitan monopalmitate	15.6	Yellow liquid gel	500 cs
Tween 60	POE (20) sorbitan monostearate	14.9	Yellow liquid	550 cs
Tween 60K (Kosher grade)	POE (20) sorbitan monostearate	14.9	Yellow liquid	550 cs
Tween 61	POE (4) sorbitan monostearate	9.6	Tan solid	38°C
Tween 65	POE (20) sorbitan tristearate	10.5	Tan solid	33°C
Tween 80	POE (20) sorbitan monoleate	15	Yellow liquid	425 cs
Tween 80K (Kosher grade)	POE (20) sorbitan monoleate	15	Yellow liquid	425 cs
Tween 81	POE (5) sorbitan monoleate	10	Amber liquid	450 cs
Tween 85	POE (20) sorbitan trioleate	11	Amber liquid	315 cs

(1) Color and Form at 25°C determined visually. An approximation of color intensity is indicated by comparison with Gardner standards as follows:

Colorless-light yellow	< 1-2 Gardner units
Yellow	2-7 Gardner units
Amber	7-10 Gardner units

(2) Viscosity: ASTM-D-445-53T method. Pour point: ASTM-D-97-47 method.
These products are available globally and have the following inventories:

AICS	CEPA	KMOE
MITI	TSCA	

These products are either on EINECS, or are exempted from listing on EINECS.